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CALIFORNIA EARTH SCIENCE CORPORATION

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Fault Tectonics and Earthquake Hazards in the Peninsular
Ranges, Southern California, EREP Investigation 463

NASA, Ames Research Center
Mail Code 241-1
Moffett Field, CA 94035

Attention:

Gentlemen:

California Earth Science Corporation (CalESCO) is pleased to submit its 8th
Monthly Progress Report on the application of Skylab imagery to analysis of
fault tectonics and earthquake hazards in the Peninsular Ranges, southern
California under NASA Contract No. NAS 2-7698.

Summary Outlook

The principal plans for the immediate future are to continue analysis of images
from SL1/SL2 and SL3. The milestone plan provides a time-oriented schedule of
the entire effort to be performed.

Significant Progress

1. Two additional pseudocolor transformations of the Salton Sea image
with different color balances have been completed.
2. The red/green subtraction of the Salton Sea images have been com-
pleted.
3. Considerable effort was devoted to applying Skylab imagery to the
problem of the continuation of the San Andreas fault in southeastern
California and northern Sonora, Mexico. Professors Richard Merriam
and Greg Davis at U.S.C., Sanford Werner of the California Department
of Water Resources and Professor Perry Ehlig at California State
University, Los Angeles, who have recently been working in the area,
were consulted on this problem. The Skylab images reveal a number

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of faults (which have been confirmed by unpublished data) that are probably related to the San Andreas, but no continuous feature is apparent.

Skylab images also suggest a northwestward extension of the San Jacinto fault from its obvious trace just north of the Colorado River Delta, through Mexicali Valley, and across the border into Imperial Valley. Positive identification of the fault's location awaits field confirmation.

4. Field work was initiated in the Peninsular Ranges in anticipation of receiving cloud-free imagery of that area from SL4. In the interim, lineations apparent in ERTS images are being investigated. To the present time, field work has demonstrated three faults which do not appear on any published maps.
5. On 13 January 1973 in anticipation of an EREP pass the same day, a flight in a light aircraft was made over the Peninsular Ranges. Observations were made of unexplained linear features seen in ERTS and RB57 images as well as the San Jacinto and Elsinore fault systems.
6. S 190 A 70 mm positive transparencies and S 190 B positive transparencies of a portion of the site from SL3 were received. The western part of the Peninsular Ranges were cloud-covered on this ascending pass, but the eastern portion of the Ranges, including parts of the San Jacinto and Elsinore fault zones, was clear, as was the desert from Borrego Springs to the Arizona border.

Expected Accomplishments, Current Month

1. If S 192 tapes are received, work will progress on digital enhancements.
2. Enlargements of selected SL3 frames will be made.
3. Work on technical reports will be continued.
4. Analysis of SL1/SL2 imagery will be continued, and analysis of SL3 imagery will be initiated.
5. Supporting studies will be continued.

February 5, 1974

Travel Summary and Plans

Field checks of faults imaged in SL1/SL2 and SL3 will continue during February.

Very truly yours,

CALIFORNIA EARTH SCIENCE CORPORATION

Paul M. Merifield

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